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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,264	01/11/2002	Daniel R. Lane	22-0192	7858
30050	7590	09/08/2004	EXAMINER	
PATENT COUNSEL, TRW INC. S & E LAW DEPT. ONE SPACE PARK, BLDG. E2/6051 REDONDO BEACH, CA 90278			DOAN, KIET M	
		ART UNIT		PAPER NUMBER
		2683		C

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,264	LANE ET AL.	
Examiner		Art Unit	
Kiet Doan		2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 January 2002.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08/04/03, 11/20/03</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarraf et al. (Patent No. 6,175,719) in view of Adiwoso et al. (patent No. 5,963,862).**

Consider **claim 1**, Sarraf teaches a multi-beam satellite comprising (Col 1, lines 52-53 teach multi-spot-beam satellite) an input section to receive a plurality of uplink spot beams in a first range of frequencies (Col 2, lines 1-5 teach plurality of uplink which receive signal that would be the input section of first range frequency) an output section to transmit a plurality of downlink spot beams in a second range of frequencies (Col 2, lines 5-9 teach plurality of downlink which transmit signal that would be output section of second range frequency) said IF section to down-convert said plurality of uplink spot beams in said first range of frequencies to a plurality of intermediate signals in an intermediate range of frequencies (Col 3, lines 13-34 teach uplink spot beam with down-convert and IF) flexibly and selectively switch and filter said plurality of intermediate signals in said intermediate range of frequencies (Col 2, line 62, Col 3, lines 54-60 teach flexibly, selectively switch and filter) and up-convert said plurality of intermediate signals

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in said intermediate range of frequencies to said plurality of downlink spot beams in said second range of frequencies (Col 3, lines 20-34 teach downlink with up converter).

Sarraf teach the claim limitation **but is silent on** and an IF section coupled between said input section and said output section.

In an analogous art, Adiwoso teach "Integrated Telecommunications System Providing Fixed and Mobile Satellite-Based Services". Further Adiwoso teaches and an IF section coupled between said input section and said output section (Col 4, 44-45, Col 5, lines 34-42 teach satellite coupled with NCC and multi-media device which would be coupled input/output section).

Therefore, it would be obvious to one of ordinary skill in the art at the time of applicants invention to included, within Sarraf system, Integrated Telecommunications, as taught by Adiwoso to modify the system that would provided low cost and high performance.

Consider **claim 2**, further Adiwoso teaches the satellite wherein said first range of frequencies and said second range of frequencies are in a different band of satellite frequencies than the intermediate range of frequencies (Col 4, lines 31-43 teach multip-beam-users link frequency comprise different band which would be (up/down link) first/second range of frequency).

Consider **claim 3**, further Adiwoso teaches The satellite of claim 2, wherein said first range of frequencies and said second range of frequencies are in the K-band and

the intermediate range of frequencies are in the C-band (Col 6, lines 49-67 teach frequency in C-band and K-band).

Consider **claim 6**, further Adiwoso teaches the satellite wherein said payload architecture allocates combined returned signals from among said one of said plurality of first spot beams selected to contain a gateway by switching said plurality of first spot beams (Col 4, lines 37-38, 61-67 teach multi-beam access link which would be plurality of first spot beam and connect with gateway station).

Consider **claim 7**, further Adiwoso teaches the satellite wherein said payload architecture comprises a RF module mounted on an antenna, said RF module including a low noise amplifier, or a combination of a low noise amplifier and down-converter (LNA D/C). Sarraf teaches or a combination of a low noise amplifier and down-converter (LNA D/C) and redundancy switching (Col 12, lines 22-33, Col 13, lines 54-67, Fig.7 No.131a/b teach traffic equipment coupled with radio frequency which would be RF module mounted on antenna dish and switching between feed horns mean redundancy switching).

Consider **claim 8**, further Adiwoso teaches the satellite wherein coaxial cables are used to route signals from said RF modules (Col 13, lines 54-61 teach RF frequency coupled with hardware traffic equipment such as antenna dish which would be obvious coaxial cable are use).

Consider **claim 11**, further Adiwoso teaches the satellite wherein a first frequency translation is performed on said plurality of uplink spot beams and a second frequency translation, different from the first frequency translation, is performed on a second plurality of uplink spot beams (Col 6, lines 35-57 teach performed uplink and different frequency).

Consider **claim 4**, Sarraf teaches the satellite wherein said IF section up-converts said plurality of intermediate signals in said range of intermediate frequencies with selectable translation amounts (Col 3, lines 45-60 teach upconverters and with intermediate frequency and select bands mean as select translation).

Consider **claim 5**, Sarraf teaches the satellite wherein said payload architecture allocates capacity among said plurality of uplink spot beams by switching and filtering of said plurality of uplink spot beams in said IF section (Col 3, lines 8-14, 50-60 teach uplink switching and filter in IF section).

Consider **claim 9**, Sarraf teaches the satellite wherein said down-conversions comprise a different translation for different uplink beams (Col 3, lines 13-17 teach uplink and downconverter which separates signal of opposite polarization mean as different translation).

Consider **claim 10**, Sarraf teaches the satellite a first frequency translation is implemented on a first polarization and a second frequency translation, different from the first frequency translation, is implemented on a polarization opposite to the first polarization (Col 3, lines 14-20, Col 4, lines 1-7 teach polarization and signal of opposites polarization).

Consider **claim 13**, Sarraf teaches The wherein said IF section performs block down-conversions and the rearrangement and selection of said plurality of uplink spot beam frequencies is performed by selectable up-conversions (Col 3, lines 14-49 teach uplink and performed upconverters).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarraf et al. (Patent No. 6,175,719) in view of Adiwoso et al. (patent No. 5,963,862) and further view of Blasing et al. (Patent No. 5,771,449)

Consider claims 12 and 19, Sarraf and Adiwoso teach the claimed limitation as above **but is silent on** the satellite wherein said selectable (frequency) translation amounts are obtained by selection of different local oscillation frequencies.

In an analogous art, Blasing teach "Sectorized Multi-function Communication System". Further Blasing teach the satellite wherein said selectable (frequency) translation amounts are obtained by selection of different local oscillation frequencies (Col 20, lines 24-33 teach local oscillator which could be select).

Therefore, it would be obvious to one of ordinary skill in the art at the time of applicants invention to include, within Sarraf and Adiwoso system, sectorized multi-funtion communication system, as taught by Blasing to modify the system that would provided the use of satellite that flexibility to select different LO frequency according to the need.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anselmo et al. (Patent No. 6,125,261) in view of Sarraf (Patent No. 6,574,794).

Consider claim 14, Anselmo teaches a method of switching a plurality of uplink spot beams to a plurality of downlink spot beams in a multi-beam satellite (Col 2, lines

30-35, Col 4, lines 1-5 teach switching a plurality of uplink/downlink) said method comprising: down-converting said plurality of uplink spot beams to a plurality of intermediate frequencies (Col 5, lines 7-14, Col 6, lines 10-16 teach intermediate frequency and circuit switch which beam received and down converting to switch circuit)

Anselmo teach the claimed limitation as above and fail to teach selectively switching and filtering said plurality of uplink spot beams at said plurality of intermediate frequencies; and up-converting said switched and filtered uplink spot beams from said intermediate frequencies by a plurality of selectable frequency translation amounts to the frequencies of said plurality of downlink spot beams.

In the same field of endeavor, Sarraf teach "System and Satellite Payload Architecture For Interactive Data Distribution Services". Further Saffaf teaches selectively switching and filtering said plurality of uplink spot beams at said plurality of intermediate frequencies (Col 5, lines 42-62 teach uplink frequency subband filter switch matrix and select intermediate frequency) and up-converting said switched and filtered uplink spot beams from said intermediate frequencies by a plurality of selectable frequency translation amounts to the frequencies of said plurality of downlink spot beams (Col 5, lines 34-65, Col 8, lines 23-27 teach UFSM which would be switch, filter uplink with select IF and process into downlink).

Therefore, it would be obvious to one of ordinary skill in the art at the time of applicants invention to included, within Anselmo system, system and satellite payload, as taught by Rarraf to modify the system that would provided a method of switching that server the demand of high and low end users in affordable connection.

Consider **claim 15**, further Sarraf teaches the method wherein said switching and filtering serves to allocate capacity among said plurality of uplink spot beams (Col 2, line 15, Col 9, lines 1-10 teach switch and filtering allocate capacity of uplink).

Consider **claim 16**, further Sarraf teach the method wherein said plurality of uplink spot beams are down-converted by different translations (Col 5, lines 15-28 teach uplink are down-convert by different rates which would be different translation).

Consider **claim 17**, further Sarraf teaches the method wherein uplink spot beams are block down-converted by a different translation than other uplink spot beams (Col 5, lines 15-28, Col 6, lines 48-67, Col 7, lines 1-10 teach satellite access control center and broadcast channel management center that would control means block down-convert and different translation than other uplink spot beams).

Consider **claim 18**, further Sarraf teaches the method wherein the uplink spot beams received at a first polarization are block down-converted by a different translation than the uplink spot beams received at a second polarization (Col 5, lines 15-50, Col 6, lines 62-67, Col 7, lines 1-10 teach uplink with polarization).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Curello et al. Patent No. 6,628,919

Houston et al. Patent No. 6,272,317

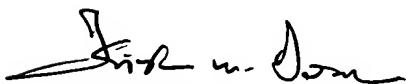
Reinhardt Patent No. 6,571,081

Sharon et al. Patent No. 6,704,543

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiet Doan whose telephone number is 703-305-4749. The examiner can normally be reached on 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kiet Doan
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